

Clinical Section

Major Trigeminal Neuralgia or Tic Douloureux

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AETIOLOGY

Facial neuralgias have been recognised for several hundreds of years. As early as the thirteenth century Bishop Button's Tomb in Wells Cathedral, England, became a shrine for those suffering from this affliction to visit, in the hope of receiving relief.

At the present time these neuralgias have been classified under their various aetiological heads, but the cause of trigeminal neuralgia or tic douloureux still remains a mystery. Many theories have been advanced, but the fact remains that no pathological changes have been found in the fifth nerve, the Gasserian ganglion, or the nerve nuclei, within the brain stem, to account for the symptoms. Sex apparently plays no part, and although it occurs chiefly in those over 50 years of age, it also occurs in the second and third decades.

The glossopharyngeal nerve is the only other nerve in the body that can produce similar symptoms. Both of these nerves supply the oral cavity, and this may signify that the nerve endings are the original source of the stimulus that produces such disastrous effects. This may be even more significant when one realises that tic douloureux almost invariably starts either in the mandibular or maxillary division of the fifth nerve, the supraorbital, when involved, only entering the picture secondarily.

SYMPTOMS AND DIAGNOSIS

Major tic is characterised by a sudden onset of a paroxysmal stabbing, lancinating tearing pain, over the distribution of the maxillary or mandibular division of the fifth nerve, more frequently on the right side. When well established, the pain is one of the most agonising that a human being is called upon to suffer. The duration of the pain is usually only a minute or two, but while it lasts, the afflicted one holds his head with his hands, and remains motionless until it has passed off, when he is again perfectly well, but apprehensive of another attack.

The radiation of the pain is parallel to the direction of the distribution of the main branches of the nerves, and is confined entirely to the area supplied by this nerve. As time passes, two or even three branches may become involved. There-

fore, facial pain, due to trigeminal neuralgia must have a distribution in the skin of one side of the face, lips, nose or forehead, up to, but never across the mid-line, and unilaterally in the tongue, and buccal mucous membranes.

This type of recurring attacks of pain may continue for days or weeks; an attack coming frequently during the daytime, but seldom waking the patient when they are finally able to get to sleep. The precipitating cause of an attack may be a cold draught, sneezing, talking, eating or touching one of "The Trigger Points," which are small areas usually at the corner of the mouth, over the chin, side of the nares, or at the outer angle of the eye. They are called trigger points, because if one of these areas is touched, or rubbed, an attack is immediately precipitated. Frequently during the period of attacks these patients are afraid to eat or drink, and often talk with the jaws clamped together for fear of bringing on an attack.

After a period of days or weeks the attacks may stop as suddenly as they started, and the patient may remain entirely free of them for many months, but they invariably recur.

With the recurrences the periods of freedom become shorter, and in long standing cases the attacks may be continuous, with no remissions.

As a result of the inability to take food without aggravating the attacks, elderly people become very much emaciated and weakened.

I will not discuss the various atypical facial neuralgias, and their differential diagnosis, as this would be too time consuming, but a quotation from Frazier, who wrote a classical description of these conditions will, at least, give some idea of the difference between the typical or major trigeminal neuralgia, and the atypical neuralgias.

Frazier says of atypical neuralgia:—"The pain is not referred to the peripheral distribution of the nerve, I.E., not to the lips, chin, ala of the nose, rather to the cheek, temple, orbit, in front of, or behind the ears, and occasionally to the jaws. The pain does not radiate along the course of one or other nerve tract, it seems unrelated to any anatomic distribution. It will jump across from one zone of the three divisions to another, but never to the periphery. The pain extends beyond the trigeminal territory, behind the ear, to the submaxillary region, to the shoulder and arm. In the majority of cases the pain is described as drawing or pulling. The thought of pressure disturbance seems dominant, the tissue of the region feels as though under tension; or the pain may be described as burning, an ache, sometimes boring or throbbing, rather than cutting, stabbing or tearing. It is almost always seated deep in the orbit, deep in the cheek or temple, not superficial, or terminal. What is

particularly noteworthy is, that it is constant, and not intermittent or paroxysmal, though varying in its intensity. It is relieved by opium, and is often as bad by night as by day."

It is important to recognise true tic from the atypical case. This may be difficult at times, on clinical grounds, but blocking the trigeminal pathways by alcohol injection of the suspected branch or branches involved will always give immediate relief to trigeminal neuralgia, whereas the atypical case remains unaffected. Unfortunately, indeed, is the surgeon who sections the sensory root of the 5th nerve, to find that he still has under his care a patient who is not relieved of his neuralgia.

TREATMENT

There is only one effective treatment of trigeminal neuralgia, and that is blocking of the nerve in some part of its course. Sedatives have no effect on the pain, therefore these people seldom become drug addicts.

Inhalations of trichlorethylene or chloralone, which is supposed to have a selective paralysing effect on the 5th nerve has been reported to give relief in about 10 to 15% of patients, but in my hands it has not proved effective.

There are two methods of blocking the pathway of the 5th nerve. (1) By alcohol injection of the branch or branches involved, or (2) By section of the sensory root, proximal to the Gasserian ganglion.

Injection at the supraorbital, infraorbital, or mental foramina is unsatisfactory, and the relief obtained is usually of short duration. The injection commonly used is done by introducing a needle below the zygoma (at a depth of about 5 cm.) into the pterygoid fossa, where the nerve is located. The assistance of the patient in indicating when the typical pain is felt is of great value in doing the injection. Following a satisfactory injection there is complete anesthesia over the distribution of the injected branch. Needless to say this injection must be done with a conscious patient, as good co-operation is necessary to ensure the operator locating the nerve. Such an injection gives complete relief from pain for a period of from 8 to 14 months, and may be repeated many times.

It is preferable to inject most patients once, not only from a diagnostic point of view, but because it demonstrates to the patient the permanent loss of sensation that will be produced by nerve section at a later date.

Another valuable indication for injection treatment is the debilitated patient, who is a poor operative risk. No case should suffer this complaint because they are unable to stand an operation. Any such case can be relieved by injection.

Operative treatment is limited to two procedures. (1) Section of the sensory root, after exposing the Gasserian ganglion in Meekel's Cave, the approach being made extradurally through the middle fossa. (2) Section of the 5th nerve, close to the brain stem, the approach being made through the posterior fossa by elevating the cerebellar lobe.

The former is the approach generally chosen, and the only one about which I wish to speak. At this site one can roughly divide the sensory route into thirds, each third corresponding to one of the divisions of the 5th nerve. The lateral third representing the mandibular division, the middle third the maxillary division and the medial third the supraorbital division. It is thus evident that one can do a differential section. The importance of this, is, that sensation to the cornea is supplied through the supraorbital branch, and as this branch is rarely involved in trigeminal neuralgia, section of the outer two thirds of the sensory root is all that is required to cure the patient, and he is left with a normal eye. Loss of sensation to the cornea is an inconvenience, sufficiently troublesome to be avoided if possible.

Situated immediately behind, and actually running in a groove in the posterior surface of the sensory root, is the motor root, which is easily distinguished, separated, and preserved at operation. As the motor root supplies the muscles of mastication, it is important to save it.

RESULTS OF OPERATIVE TREATMENT

The sensory root proximal to the ganglion is non medulated, therefore section of any part of it is not followed by regeneration. The effect is permanent.

Recurrence of the neuralgia in the supraorbital branch after section of the sensory root supplying the two inferior divisions, practically never occurs, providing this branch was not involved before operation.

Trigeminal neuralgia is occasionally bilateral, and can be cured by operation on each side, in two stages, just as completely as if it were unilateral.

The mortality from this operation is extremely low, in spite of the fact that most of these cases are over 50 years of age. A mortality of 2 to 3% is a generous estimate. Several series of over a hundred cases are reported without a death.

One post-operative complication should be mentioned for although only temporary, and therefore not serious, it may be very distressing while it lasts. Facial paralysis of the involved side occurs in about 4 or 5% of cases, and is caused by undue retraction in a difficult exposure. After several weeks or months, it clears up entirely.

The post-operative stay in hospital is usually from 10 to 14 days.

Hypoglycaemia: A Review

By

CHARLES H. A. WALTON, M.Sc., M.D. (Man.)

Hypoglycaemia is the name given to that clinical state characterized by an abnormally low sugar content of the blood. Low blood sugars have been observed frequently in experimental animals since Claude Bernard's work as far back as 1849. They have also been observed in rare clinical cases as early as 1909 by Porges and by Cushing in two cases of pituitary tumour in 1912. However symptoms were not associated with the condition until 1921 when Mann demonstrated that when the blood sugar of the dog was markedly lowered, by extirpation of the liver, a definite train of symptoms were produced which were promptly, though temporarily, relieved by administration of sugar. He naturally concluded that the symptoms were due to the abnormally low blood sugar level.

A similar train of symptoms were found when Banting and his associates first administered insulin to humans in 1922. They found that the insulin caused the blood sugar to drop, often to very low levels and that this drop always caused certain nervous symptoms which were promptly relieved by sugar. That is insulin shock was really artificial hypoglycaemia.

In 1923 Harris first suggested that it was possible that hypoglycaemia could occur spontaneously due to overactivity of the pancreas, that is that hyperinsulinism was theoretically as possible as hypoinsulinism, or diabetes. In 1924 he reported several cases which presented symptoms of irritability of the nervous system and which were associated with abnormally low blood sugars and which were promptly relieved by sugar or carbohydrate administration.

Thus spontaneous hypoglycaemia, as a clinical entity, really dates back to 1924. Since that date the subject has become prominent and a large number of cases have been reported. In 1927 Wilder reported the first case with a pathological basis — namely a carcinoma of islet cell tissue with secondaries in the liver. In 1929 the first surgical cure was reported by Graham who removed a benign adenoma of the pancreas. This adenoma consisted almost entirely of islet tissue and contained insulin. There are now a large number of reported cases which have responded to dietary measures and there have been twenty-two cases reported in which tumours of islet tissue were found and removed with complete relief of symptoms. There have also been ten cases reported in which these tumours have been found at autopsy following death with hypoglycaemic symptoms. A further sixteen cases have been operated upon in which no tumour or evidence of hyperplasia have been found. Partial resection gave relief in five of these.

POSSIBLE CAUSES OF HYPOGLYCAEMIA

The syndrome may be produced by a number of different conditions. Firstly, and most commonly, it is caused by an excess of insulin, either from over-dosage or from over production by the pancreas. It has been shown repeatedly that over-production can occur when there is an excess of islet tissue as in an adenoma or hyperplasia or when there is no apparent change in the pancreas. Hyperinsulinism without demonstrable change in the pancreas is probably more common than generally suspected.

Hypoglycaemia can also occur when there is a lack of the so-called opposing secretions of other endocrine glands. It has been reported in Addison's disease, in Myxoedema and in anterior lobe tumours of the pituitary and in acromegaly.

Thirdly the blood sugar may be lowered when the normal glycogen reserves are depleted. That great glycogen reservoir, the liver, may be destroyed by carcinoma, etc. There may be gross wasting of the musculature as in the dystrophies and finally the glycogen reserves may be depleted by over exertion as has been found in marathon runners who collapsed at the end of a long race, by renal glycosuria, lactation and starvation.

Finally the condition may be caused by some interference with the sugar regulating center of the region of the fourth ventricle or by over activity of the vagus. These are, of course, hypothetical.

SYMPTOMS

Symptoms vary tremendously but practically all are nervous manifestations. Usually but one part of the nervous system is preponderately affected, in any one case. There may be and usually are general symptoms such as headache and fatigue. Often the symptoms are all autonomic such as flushes, sweating, cold, pallor, dim vision, palpitation, salivation, sudden variation in the blood pressure and maybe collapse. Symptoms of the central nervous system include any of the following: double vision, nystagmus, unequal pupils, disorders of speech, aphasia, transient paralyses, motor irritability with a positive Babinski sign, convulsions which may resemble epilepsy, tremor, twitchings, grimacing gesticulations, etc.

Psychic manifestations are frequently present. Hallucinations and delusions are not uncommon. Behaviour may be almost maniacal or suggestive of acute alcoholism or there may be only slight anxiety and apprehension. A common characteristic is complete loss of memory of the details of the attack.

The main gastro-intestinal symptom is hunger but this is not always present and lack of appetite with nausea and even vomiting is not uncommon. Tachycardia and extra-systoles are frequent and if previous myocardial disease exists angina pectoris may occur.

To sum up, the symptoms may vary from a vague feeling of anxiety with some flushing or sweating and hunger to extreme symptoms with mania, convulsions and coma. The symptoms are preponderately those of irritability of the nervous system and may simulate many other disorders of that system.

DIAGNOSIS

The time of onset of the attacks is the most useful diagnostic criterion. If they develop early in the morning or before a meal and there is almost instant relief after food a blood sugar estimation is indicated, during the attack. Or a prolonged sugar tolerance test may be done. Even if the symptoms are very mild this food relationship is most important. Many diseases of the central nervous system have been simulated by hypoglycaemia and the following interesting examples are taken from the literature; cerebral vascular disease; cerebral tumour; encephalitis; epilepsy; various psychoses such as mania obsessions, melancholia, confusional violence and even hysteria and neurasthenia. Sometimes intoxication with alcohol or narcotics is simulated.

TREATMENT

During the attack, glucose by any available route is indicated and it will always abort the attack except in a few terminal cases. Adrenalin is only useful if the glycogen reserves are intact. Prevention of attacks in the milder cases can be obtained by means of frequent small carbohydrate

meals. Sometimes mild morning attacks can be prevented by a glass of orange juice during the night.

Even severe cases can usually be managed by frequent carbohydrate feedings, although in this connection it is worth remarking on the case which was reported of a woman who gained 100 pounds weight in a few months on such a regime. Harris suggests that mild cases should be treated with low carbohydrate diets so that there will be a minimum stimulation of the pancreas and this seems to be a useful procedure. However, persistent and increasing symptoms may demand surgical intervention. The pancreas has been explored in many cases now and adenomata have been removed with resulting cure. The mortality rate of pancreatic explorations, in good surgical hands, has been remarkably low. (Note; a case of surgical cure by the removal of an adenoma of pancreatic islet tissue is being reported from the Winnipeg General Hospital in the Canadian Medical Association Journal).

The literature on Hypoglycaemia is quite extensive. The subject is very thoroughly reviewed by Harris (1), Wauchope (2) and Whipple et al. (3).

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Editorial

The Report on the Survey of Illnesses Amongst Unemployed of the City of Winnipeg

The first part of this report was published in the May number of the *Review*, and the second part is printed in the present number. In many ways it is an unusual contribution to the subject of medical economics. The first important point is that records were available as to the illnesses among over 30,000 people in the City of Winnipeg for a period of twelve months—the actual average number of persons on relief during this period was 33,731. Among this group all forms of illness and injury of sufficient importance to require medical attention, are recorded in this report. The only likely exceptions to this are (1) Dental cases; (2) Certain cases for which treatment may have been refused because the condition present was not considered to be dangerous to life or likely to cause permanent disability (the Winnipeg plan was never intended to be a complete medical service and never has been); (3) refractions; (4) accidents as the result of industrial hazards; (5) a small proportion of illness which may have required medical attention for which no report may have been filed.

In the first part of this report the survey officer stated that as soon as a doctor reached his quota of \$100.00 in one month, he continued to do the work but probably did not send in any report. It is likely that too much emphasis was laid upon this factor, as there were many doctors who reported two, three and even four hundred dollars worth of work in one month.

Although these people concerned in this report were all on relief they represent many occupational groups and various racial types in the City. From this group then could be recorded the incidence of illness during one year with an accuracy which probably has not been approached in any other survey, certainly not in Canada. The report of the Committee on Economics of the Canadian Medical Association which was presented at the Annual Meeting of the Canadian Medical Association, Calgary, June 1934, was made up largely of a summary of information contained in reports about conditions in other countries and were available in already existing publications. None of these reports could of course be applied to conditions in Canada. Until this present report was made from Winnipeg, no actual figures as to the cost of medical services have been available anywhere in Canada and this group is entirely confined to a city. The references in the report of the Committee of the Canadian Medical Association with regard to Canadian conditions refer to generalizations only.

As pointed out in the report, the cause of illness emphasises the importance of certain diseases altogether different from those that are prominent in tables of mortality.

Another interesting feature of the purely medical aspects of the report are the relations between the pathologist's report on tissues removed at operation and the pre-operative diagnosis. In all except one or two cases the presumption of definite pathology appears to have been confirmed.

With regard to the mortality statistics among this group, it is interesting to note that the maternal mortality rate is 4.4%, whereas that for the rest of Winnipeg was 6.2%; the general death rate per 1,000 population on relief was 2.4% and that per 1,000 for the City of Winnipeg 6.66%. That is to say the mortality rates among the unemployed in the City of Winnipeg was lower than that of the general population of the City by quite a definite percentage.

The second part of the report published in this number of the *Review* deals largely with the costs of medical services. In this connection it is important to emphasise the fact that not only are the schedule of fees for medical men only a proportion of the usual fee but also that as many men do more than \$100.00 worth of work in a month, that the amount actually paid to the medical men is by this method much lower than what it set

out in the schedule of fees, e.g., if a man did eight major operations in a month the schedule of fees might call for payment at the rate of \$25.00 per case, or \$200.00 in all, but as each doctor is limited to payment of \$100.00 for the month these operations would actually be done at the rate of \$12.50 each. The fact that a few medical men are allowed to collect more than \$100.00 a month does not offset this general conclusion. It is probably a safe estimate that the amount of money paid for medical services represents about one-third to one-half of the usual fees.

It is interesting to examine the costs of medical care for specific illnesses, e.g., there were 199 cases of pneumonia which necessitated 1,256 calls, the total doctors' fees charged for these cases was \$1,013.00. This works out at a total cost for medical fees per case of pneumonia of \$5.09.

In comparing the part that is played by medical fees and hospital expenses in the cost of illness, it is important to notice that the total fees paid to doctors for all cases was \$86,913.50, while the total hospital charges actually paid by the City and Province were \$58,093.51. When the high cost of medical services is discussed by laymen the fact is often overlooked that a large share of the total cost is due to the expense of hospitalization. Many cases requiring hospitalization now cost more for treatment than they did thirty-five years ago, for the simple reason that at that time many of them died after a short illness. The advance in the scientific knowledge of the cause and treatment of such diseases as diphtheria, appendicitis, diabetes, etc., has reduced the mortality very definitely. But the treatment required and the hospitalization which is necessary for these cases, cost more than a short illness followed by a funeral, especially if the funeral expenses are not included in the estimates.

In considering the value of this report the introduction of the second part in this number of the *Review* is of great importance. In this introduction the survey officer explains the difference between the figures which he allows for the cost of medical services and the amount actually paid by the City. It is unfortunate that these totals could not have been made to correspond more closely. The figures which he includes for extra charges in hospital (not paid for) may be questioned by hospital Superintendents as they are apparently only an estimate.

Making allowance for these possible disputable points, this survey represents a study of the incidence of illness and the cost of medical care which is unique in this country. It must be again emphasised that the medical fees represent only a proportion of the normal fees for these services.

C. W. MacC.

DR. HERBERT SECORD

AN APPRECIATION

The death of Dr. Herbert Secord on May 13th was a distinct loss to organized medicine in Manitoba. His fine sense of public duty and his zeal to advance the honour and dignity of his profession led him to undertake many onerous duties, and the appreciation of his fellows showed itself in his election to many positions of trust:—President of the Winnipeg Medical Society, Vice-President Manitoba Medical Association, Treasurer and President of the College of Physicians and Surgeons of Manitoba, member of the Medical Council of Canada. In all these positions he gave himself to the full. As a member of the joint committee of the College of Physicians and Surgeons and the Manitoba Medical Association to consider Health Insurance he prepared and submitted a complete and well worked out scheme of health insurance applicable to this province.

During the Great War he served three years with the 11th Field Ambulance, gaining the rank of Major and winning the Military Cross. For several years after his return he was Commanding Officer of the Canadian Officers Training Corps in Manitoba University.

In professional life he was highly regarded as a surgeon, and for several years he was a Lecturer in Clinical Surgery in the University of Manitoba.

He is survived by his widow, sister of his life-long friend, Dr. W. G. Campbell, and his only son, Campbell.

The whole community is the poorer through the passing of a man of high ideals, professional skill, and marked devotion to duty.

Survey of Illness Amongst Unemployed in the City of Winnipeg

*March 1st, 1934, to February 28th, 1935
inclusive*

Conducted by

THE DEPARTMENT OF HEALTH AND PUBLIC WELFARE,
PROVINCE OF MANITOBA

and

THE COMMITTEE ON SOCIOLOGY OF THE MANITOBA
MEDICAL ASSOCIATION

with the co-operation of the

WINNIPEG UNEMPLOYMENT RELIEF COMMISSION

Survey Officer: M. R. ELLIOTT, M.D. (Man.), D.P.H. (Tor.)

PART II

This paper presents a report of the distribution of cost of medical attendance to the unemployed, in the City of Winnipeg, for one year. It is not to be regarded as an accountant's balance sheet of actual costs, but rather an attempt to show

how the money was distributed according to specific illness. The statistics were compiled from a survey of the physicians' reports.

All doctors on the panel were obliged to report within 24 hours on specified forms every case of illness treated by them, to be followed at frequent intervals by a progress or discharge report. At the relief office a file was kept for each doctor, and within this file an attempt was made to keep each patient's report; theoretically, a careful perusal of these reports should have provided an accurate account of all illnesses and attendances for the year. It was found that such a condition did not exist. It was also required of the attending physicians that at the end of each month they send an itemized list of all patients, with the nature of illness, the form of attendance given, whether home or office visit, medical or surgical treatment, together with an itemized statement of all charges eligible for collection from the city. The monthly statements from the doctors, upon which they collected their fees, presented a more complete picture of the amount of medical attendance than did the detailed medical reports. In order to gain a comprehensive view, both reports had to be studied. Professional services extending over several weeks or even months would frequently be served by only one Medical Report form. This involved much extra labor and also increased the possible percentage of error.

Classification of illness was made under three main divisions, viz., Obstetrical, Medical and Surgical. The various diseases or groups of diseases which are closely related were tabulated under separate headings. Thus, the completed statistics present as accurate a picture as is possible of the amount of illness, its cause, the number and nature of calls made, the operative procedures necessary and the cost to the city. It should be borne in mind that the schedule of fees was not intended to compensate the doctor for professional skill or knowledge, but merely to reimburse him for actual expenditure and overhead outlay necessary for the proper care of these patients. The present figures can not be accepted as being an estimate of the cost of illness under normal conditions.

It will be noticed that some discrepancy exists between the final figures as quoted herein and those published by the city. Several factors enter into this report which may throw light on the apparent difference. In the first place, owing to the fact that this report covers the first months of operation of the scheme when many doctors were unfamiliar with the requirements, records of attendance were not as thorough as in later months. While every effort was made to have these records as complete as possible, lapses did occur, and the writer observed on more than one instance a doctor fill in from memory the reports on twenty or more cases. As the figures were taken solely from these reports, the omission of the nature of professional services, for which money was actually paid out, was possible.

Secondly, in the matter of classification of illness a purely arbitrary system has been followed. Many so-called "Medical Cases," later requiring surgery, may be found listed among Surgical Cases. Similarly, many "Surgical Cases," requiring no operative measures, are listed among Medical Cases. The classification of cases at the relief office, made sometimes by non-medical men, and based solely upon the fees charged by doctors, doubtless accounts for a considerable variation in the figures.

Thirdly, our interest was mainly concerned with the nature of the illnesses, their frequency, and the amount of medical attention necessary. The fees charged were incidental and based entirely upon the physician's report of such services. The figures compiled by the City accountants were taken directly from records of monies paid out and their concern was chiefly financial. Their statement presents a more accurate picture of monetary outlay.

Bearing in mind these facts, this report presents an accurate picture of all illnesses, reported in full to the relief office, and on this basis should be valuable from the following viewpoints:—

1. It presents a picture of the Incidence of Disease.
2. It outlines clearly the amount of medical attention given to each illness or disease.
3. It shows the cost of such medical attendance per specific disease or group of diseases, and the proportionate part which each bears to the total cost.
4. It forms a basis for comparison with future statistical studies of a like nature.

Obstetrical Cases

Number of Confinements at Home	78
Number of Confinements at Hospital	615

Total Number of Confinements.....693

Number of Abortions at Home	72
Number of Abortions at Hospital	65

Total Number of Abortions.....137

Total number of cases for the year.....830

Total Cost of Cases at Home.....\$2,756.50

Average Cost of Home Case.....18.38

Hospital Cases

Doctors' Fees.....\$ 6,832.50

Hospital Costs paid by City.....13,792.25

Hospital Costs paid by Province.....2,768.80

Total Costs.....23,393.55

Average Cost Hospital Case Paid.....\$34.39

Cost of Extra Services rendered in Hospital
but not paid for.....\$2,782.00
(Including charges for case room
Pathological Examination, etc.)

Average Cost Hospital Case if Extra Added.....\$38.48

Total number of days spent in Hospital.....6,922

Average days spent in Hospital.....10.2

Average (hosp. costs only) paid by City.....\$20.28

Average (hosp. costs only) paid by Province.....4.06

Average cost of extras not paid for.....4.09

Average Total Hospital Costs.....28.43

% of Maternity Cases at Home.....10.9

% of Abortions at Home.....53.3

% of Abortions to Total Obstetrical Cases.....18.0

Birth rate per 1,000 among Relief Cases.....19.9

Maternal Mortality Rate.....4.4

Maternal Mortality Rate Rest of Winnipeg (1934) 6.2

(Provisional Figure)

MEDICAL CASES

DISEASE	No. of Cases	No. of Days Illness	Calls Made by Doctors		Total Doctors' Fees Charged	No. Cases in Hospital	No. Days in Hospital	Hospital Costs Paid by City	Total Costs Hospital Plus Doctor	Total Hospital Charges (Not Paid)	Total Costs Including Extras
			Home	Hospital							
A.—TOTAL RESPIRATORY DISEASES											
1. Influenza and Grippe	592	4,923	1,131	126	178	2,006.60	23	216	324.00	2,330.00	\$12,826.80
2. Pneumonia	199	2,368	639	582	35	1,013.00	78	1,070	1,605.00	2,618.00	57.00
3. Pleurisy	82	1,733	140	59	92	329.25	9	157	235.50	564.75	252.00
4. Diseases of the Pharynx	1,008	6,583	1,234	127	651	2,620.50	11	76	114.00	2,734.50	87.00
(a) Tonsillitis	472	4,268	853	69	226	1,628.25				1,628.25	22.00
(b) Quinsy	53	445	110	21	18	202.75	11	76	114.00	316.75	22.00
(c) Sore Throat	291	900	148	6	324	494.50				494.50	22.00
(d) Other Dis. of Pharynx	92	970	123	31	83	295.00				295.00	494.50
5. Diseases of the Larynx	98	1,166	115	4	110	281.20	6	134	201.00	482.20	295.00
(a) Laryngitis	74	786	91	4	95	218.20	6	134	201.00	419.20	8.00
(b) Croup	24	380	24		15	63.00				63.00	8.00
6. Hay Fever and Asthma	48	1,024	74	31	55	144.00	3	44	66.00	210.00	63.00
7. Pulmonary Tuberculosis	39	—	73	55	33	178.00	2	40	60.00	238.00	225.00
8. Other Dis. of Resp. System (Bronch. Colds, Septic, etc.)	891	12,408	980	152	1,359	2,612.75	18	360	540.00	3,152.75	244.00
B.—EPIDEMIC, ENDEMIC & INFECT.											
1. Typhoid Fever	2	110	7	9	9	26.50	1	20	30.00	56.50	48.00
2. Measles	564	5,600	851	41	20	1,355.25				1,355.25	3,200.75
3. Scarlet Fever	63	2,030	85	34	9	160.25				160.25	5.00
4. Whooping Cough	49	1,220	79	11	26	160.75				160.75	1,355.25
5. Diphtheria	50	579	7	28	11	145.50				145.50	160.75
6. Chicken Pox	62	731	97	—	16	165.00				165.00	145.50
7. Tuberculosis (Non-Pulm.)	17	—	41	40	16	167.00	4	167	250.50	417.50	165.00
8. Venereal Diseases	51	—	8	437	69	396.50	35	1,805	2,707.50	3,104.00	514.50
9. Other Diseases of this Group	24	336	26	—	10	67.00				67.00	3,104.00
C.—GENERAL DISEASES											
1. Cancer (all forms)	359	8,166	511	582	795	2,257.50	48	1,729	2,593.50	4,851.00	67.00
2. Rheumatism	39	—	219	180	29	581.25	18	371	1,306.50	1,887.75	378.00
3. Diabetes	133	2,733	213	91	197	587.00	10	283	424.50	1,011.50	5,229.00
4. Goitre	103	2,278	85	165	230	445.25	8	222	333.00	778.25	2,046.75
5. Other General Diseases	47	1,870	24	22	119	254.50	1	38	57.00	311.50	1,031.50
D.—DISEASES OF NERVOUS SYSTEM											
1. Cerebral Haem. & Apoplexy	656	9,463	547	470	1,183	2,340.50	54	1,420	2,128.50	4,469.00	803.25
2. Paralysis	19	—	56	86	16	190.00	5	450	673.50	863.50	25.00
3. Epilepsy	34	237	17	—	29	54.50				54.50	314.00
4. Chorea	13	—	22	26	138	156.50	5	90	135.00	291.50	4,717.00
5. Neuralgia	136	1,720	70	24	212	301.00	2	20	30.00	79.50	19.00
6. Neuritis and Sciatica	186	3,422	154	77	393	641.00	11	288	432.00	733.00	29.00
7. Headache	67	485	34	7	82	141.50	2	10	15.00	156.50	4.00
8. Mental Disorders (Neurosis)	148	2,899	100	115	313	445.00	14	382	573.00	1,018.00	37.00
9. Other Nervous Diseases	44	700	77	128	75	361.50	6	99	148.50	510.00	799.50

E.—DIS. OF EYE AND ADNEXA	229	3,132	112	126	494	854.75	12	155	232.50	1,087.25	13.00	1,100.25
1. Blepharitis	19	452	44	24	20	107.50						
2. Trachoma	2	90	—	—	24	27.50						
3. Epiphora	1	30	—	—	3	3.00						
4. Optic Neuritis	4	80	—	15	11	28.00						
5. Glaucoma	5	65	1	—	13	50.50						
6. Corneal Ulcer	16	484	—	47	84	151.25						
7. Chalazion	14	126	—	—	27	30.50						
8. Iritis	9	122	16	9	26	59.00						
9. Dacrocystitis	2	30	—	4	9	17.00						
10. Keratitis	5	140	—	—	34	37.00						
11. Cataract	6	500	—	—	21	19.00						
12. Conjunctivitis	146	1,013	51	27	222	324.50						
F.—DIS. OF EAR AND MASTOID	439	3,918	556	163	619	1,604.25	30	412	618.00	2,222.25	125.00	2,347.25
1. Otitis Media	376	3,469	525	158	481	1,407.50	28	397	595.50	2,003.00	115.00	2,118.00
2. Mastoiditis	15	249	29	5	30	85.25	2	15	22.50	107.75	10.00	117.75
3. Other Diseases of the Ear	48	200	2	—	108	111.50				111.50		111.50
G.—DIS. OF CIRCULATORY SYSTEM	767	10,181	1,136	554	1,653	3,820.00	80	1,221	1,831.50	5,650.50	243.00	5,893.50
1. Diseases of the Heart	174	—	627	325	393	1,535.75	36	686	1,029.00	2,564.75	122.00	2,686.75
2. Arteriosclerosis	9	—	22	—	23	57.00				57.00		57.00
3. Hemorrhoid	78	1,175	46	29	156	249.75	6	42	63.00	312.75	12.00	324.00
4. Varicose Veins	55	1,370	80	13	182	363.50	3	28	42.00	405.50	10.00	415.50
5. High Blood Pressure	91	—	120	47	265	484.25	5	72	108.00	592.25	7.00	599.00
6. Adenitis	127	1,573	126	74	154	447.75	15	155	232.50	680.25	21.00	701.25
7. Other Dis. of Circ. System (including anaemia)	233	6,063	115	66	480	682.00	15	238	357.00	1,039.00	71.00	1,110.00
H.—DIS. & DISORDERS of DIGEST. SYS.	1,797	19,105	1,841	955	2,233	5,807.80	139	1,842	3,974.20	9,782.00	766.00	10,548.00
1. Ulcers of Stomach & Duod.	165	4,520	166	149	356	786.75	22	286	429.00	1,215.75	170.00	1,385.75
2. Indigestion and Gastritis	486	3,934	454	165	459	1,255.60	24	380	570.00	1,825.60	136.00	1,961.60
3. Stomach Trouble (Unqualified)	156	1,369	79	8	228	355.50			1,208.70	1,564.20		1,564.20
4. Diarrhoea	153	1,232	153	113	110	441.25	20	264	396.00	837.25	182.00	1,019.25
5. Appendicitis	191	1,384	253	65	159	586.00	16	131	196.50	782.50	21.00	803.50
6. Hernia	74	—	40	3	89	156.25	2	10	15.00	171.25	3.00	174.25
7. Intestinal Disorders (Colitis, Constip., etc.)	277	2,839	215	85	340	738.75	4	35	55.00	793.75	8.00	801.75
8. Biliary Calculi	64	878	153	78	45	317.00						
9. Cholecystitis	130	1,622	196	141	198	588.25	30	460	690.00	1,595.25	224.00	1,819.25
10. Jaundice	18	219	18	16	20	66.00				66.00		66.00
11. Other Disorders of Liver	6	300	56	50	19	166.00	4	106	159.00	325.00	2.00	327.00
12. Malnutrition	27	—	8	—	31	46.00				46.00		46.00
13. Other Dis. of Digest. System	50	1,078	50	182	180	304.45	17	170	255.00	559.45	20.00	579.45
I.—DISEASES OF TEETH & GUMS	131	1,122	104	69	145	366.25	4	84	126.00	492.25	6.00	498.25
J.—DISEASES OF KIDNEY & ADNEXA	371	6,242	367	359	696	1,527.95	46	945	1,417.50	2,945.45	198.00	3,043.45
1. Nephritis	101	1,597	80	166	167	420.45	18	686	1,029.00	1,449.45	110.00	1,559.45
2. Cystitis & Bladder Trouble	134	2,050	49	60	316	403.50	10	107	160.50	564.00	22.00	586.00
3. Other Diseases in this Group	136	2,595	238	133	213	704.00	18	152	228.00	932.00	66.00	998.00

DISEASE	No. of Cases	No. of Days Illness	Calls Made by Doctors		Fees Charged		No. Cases in Hospital	No. Days in Hospital	Hospital Costs Paid by City	Total Costs Hospital Plus Doctor	Extra Charges (Not Paid)	Total Costs Including Extras
K.—NON-VENEREAL DIS. OF G. U. SYS.	927	20,088	774	643	2,049	3,823.75	88	1,231	1,846.50	5,670.25	310.50	5,980.75
1. Diseases of Male Organs	84	914	50	13	142	251.25	3	21	31.50	282.75	4.00	286.75
2. Dis. of Female Genital Organs	428	10,495	306	422	1,209	1,950.50	46	638	957.00	2,907.50	97.50	3,005.00
(a) Chronic Salpingitis	61	1,666	33	26	150	211.50						
(b) Endometritis	60	1,565	32	29	253	315.50						
(c) Acute Salpingitis	52	891	71	173	68	281.00						
(d) Prolapsis Uteri	11	260	5	—	19	26.50						
(e) Vaginitis	36	790	7	—	71	156.50						
(f) Ovaritis	16	276	14	—	30	49.00						
(g) Pelvic Inflammation	74	1,658	87	97	146	314.00						
(h) Fibroids	24	605	13	60	41	86.00						
(i) Ovarian Cyst	19	400	11	5	88	86.00						
(j) Endocervicitis	75	2,390	31	22	343	424.50						
3. Menstruation	308	5,405	371	194	472	1,318.25	39	572	858.00	2,176.25	209.00	2,385.25
4. Menopause	107	3,274	47	14	236	303.75						
L.—PUERPERAL STATE	89	1,250	185	191	61	502.25	2	41	61.50	563.75	10.00	573.75
M.—TOXEMIA OF PREGNANCY	83	849	86	78	89	240.50	8	122	183.00	423.50	5.00	428.50
N.—DISEASES OF SKIN & CELLULAR	1,036	13,489	514	554	2,601	3,652.15	69	1,096	1,793.50	5,445.65	179.00	5,624.65
1. Furunculosis	92	918	41	52	233	255.15						
2. Abscesses and Infection	156	2,434	109	111	415	741.75						
3. Scabies and Itch	73	789	8	3	138	155.75						
4. Impetigo Contagioso	101	1,057	43	38	122	279.50						
5. Other & Unqualified Skin Cond.	614	8,291	373	341	1,693	2,220.00						
O.—DISEASES OF BONE AND ORGANS OF LOCOMOTION	438	6,849	345	266	579	1,260.25	18	335	502.50	1,762.75	98.00	1,860.75
1. Lumbago, Myalgia & Myositis	177	2,822	99	23	242	443.75	1	23	34.50	478.25	11.00	489.25
2. Arthritis	239	3,537	213	123	281	696.25	13	284	426.00	1,122.25	77.00	1,199.25
3. Other Dis. of Bones & Joints	22	490	33	20	56	120.25	4	28	42.00	162.25	10.00	172.25
P.—CONGENITAL MALFORMATION AND INFANCY	102	868	143	566	66	333.00	6	70	105.00	438.00	29.00	467.00
Q.—SENIILITY	31	—	37	35	58	133.25				133.25		133.25
R.—EXTERNAL CAUSES	844	9,385	813	366	1,440	3,147.00	42	497	745.50	3,892.50	144.00	4,036.50
1. Poisonings	20	201	46	5	13	78.00	2	17	25.50	193.50	16.00	119.50
2. Minor Injuries	824	9,184	767	361	1,427	3,069.00	40	480	720.00	3,789.00	128.00	3,917.00

S.—NOT OTHERWISE CLASSIFIED												
	308	2,593	149	39	409	1,232.25	9	74	111.00	1,343.25	36.00	1,379.25
1. Sinusitis	91	1,179	77	21	190	319.25	4	40	60.00	379.25	28.00	407.25
2. Fever of Unknown Cause	6	29	2	3	3	6.00	1	4	6.00	12.00	1.00	13.00
3. Fainting and Dizziness	33	300	29	9	59	92.50	3	15	22.50	115.00	4.00	119.00
4. Nasal Polypi	18	255	5	—	32	50.00	—	—	—	50.00	—	50.00
5. Empyæma	1	30	—	—	3	3.00	—	—	—	3.00	—	3.00
6. Non-Malignant Tumors	14	331	14	6	57	121.00	1	15	22.50	143.50	3.00	146.50
7. Ulcers in Nose	5	100	—	—	5	15.00	—	—	—	15.00	—	15.00
8. Sterility	1	—	—	—	1	1.00	—	—	—	1.00	—	1.00
9. Gangrene	1	—	2	—	—	3.00	—	—	—	3.00	—	3.00
10. Narcolepsy	1	30	4	—	1	4.00	—	—	—	4.00	—	4.00
11. Bursitis	16	324	7	—	31	43.50	—	—	—	43.50	—	43.50
12. Serum Sickness	2	15	4	—	1	7.00	—	—	—	7.00	—	7.00
13. Referred for Refraction	93	—	—	—	—	465.00	—	—	—	465.00	—	465.00
14. Referred for Examination	21	—	—	—	—	21.00	—	—	—	21.00	—	21.00
15. Referred for Cystoscopic	5	—	—	—	—	81.00	—	—	—	81.00	—	81.00
	12,446	157,414	14,257	7,752	17,878	44,732.45	845	14,563	24,403.70	69,136.15	3,386.50	72,522.65

SURGICAL CASES

CASES IN HOSPITAL														
Cases Not in Hospital														
DIAGNOSIS	No.	Total Cost	No. Cases	No. Days in Hospital	Total Physi- cians' Fees	Total Extra Service Paid to Doctors	Total Surgeon's Fees Paid by City	Total Hospital Costs Paid by City	Total Cost of Hospital Cases (Paid For)	Extras in Hospital Not Paid For	Total Cost if All Extras Paid For	Total Cost Including Non- Hospital Cases		
A.—TOTAL RESPIRATORY DIS.														
1. Empyema	1	\$25.00	1	23	\$7.50	\$92.50	\$25.00	\$34.50	\$67.00	\$13.00	\$80.00	\$105.00		
2. Bronchoscopy	1	25.00	1	23	7.50		25.00	34.50	67.00	13.00	80.00			
B.—EYE, EAR, NOSE AND THROAT														
1. Antrum Disease	5	50.00	703	1,385	201.00	\$92.50	11,255.00	2,089.50	13,638.00	4,273.00	17,911.00	17,961.00		
2. Otitis Media	4	45.00	6	57	8.00		200.00	85.00	293.00	60.00	353.00			
3. Mastoid			6	43	10.50		55.00	64.50	130.00	30.00	160.00			
4. Eye Operations	1	5.00	17	371		92.50	600.00	571.00	1,263.50	44.00	1,307.50			
5. Tonsillectomy			14	253	12.50		500.00	377.50	890.00	181.00	1,071.00			
			660	661	170.00		9,900.00	991.50	11,061.50	3,958.00	15,019.50			
C.—GENERAL DISEASES														
1. Diabetic Gangrene	1	8.50	35	443	9.25	9.00	1,077.00	664.50	1,765.25	410.00	2,175.25	2,183.75		
2. Goitre			2	50			50.00	75.00	125.00	20.00	145.00			
3. T. B. Glands and Adenitis	1	8.50	22	296	1.00	9.00	825.00	444.00	1,218.50	295.00	1,513.50			
			11	97	8.25		202.00	145.50	421.75	95.00	516.75			
D.—CIRCUL. SYS. (HAEMORRHAGE)														
	1	15.00	15	204	10.50	4.00	230.00	305.50	539.50	176.00	715.50	730.50		

DIAGNOSIS	Cases Not in Hospital			CASES IN HOSPITAL										Total Cost Including Non-Hospital Cases
	No.	Total Cost	No. Cases	No. Days in Hospital	Total Physi- cians' Fees	Total Extra Service Paid to Doctors	Total Surgeons' Fees Paid by City	Total Hospital Costs Paid by City	Total Cost of Hospital Cases (Paid For)	Extras in Hospital Not Paid For	Total Cost If All Extras Paid For			
E.—DIGESTIVE SYSTEM														
1. Gastric Ulcer	7	122	7	122	139.55	2.00	10,448.00	5,700.50	16,290.05	3,559.50	19,849.55	19,849.55		
2. Appendicitis	185	2,352	185	2,352	67.25		7,375.00	183.00	483.00	105.00	588.00	588.00		
3. Rectal Abscess, etc.	10	177	10	177	12.55		229.50	265.50	507.55	158.00	665.55	665.55		
4. Intussusception	5	27	5	27			250.00	40.50	290.50	51.00	341.50	341.50		
5. Gall Bladder Disease	31	573	31	573	42.75	2.00	1,125.00	867.00	2,036.75	516.00	2,552.75	2,552.75		
6. Bowel Obstruction	5	84	5	84	7.50		200.00	131.00	338.50	64.00	402.50	402.50		
7. Hernia	25	427	25	427	9.50		905.00	645.00	1,559.50	283.50	1,843.00	1,843.00		
8. Cirrhosis of Liver	1	8	1	8			25.00	12.00	37.00	10.00	47.00	47.00		
9. Ruptured Liver	1	23	1	23			38.50	34.50	73.00	10.00	83.00	83.00		
F.—GEN-URINARY SYSTEM														
1. Nephritic Abscess	2	31	2	31	31.50	80.00	715.00	460.00	1,286.50	276.00	1,562.50	1,562.50		
2. Stone in Bladder	1	15	1	15	5.00		50.00	47.00	102.00	24.00	126.00	126.00		
3. Urethral Carbuncle	1	3	1	3	8.00		25.00	22.50	55.50	10.00	65.50	65.50		
4. Renal Calculus	1	43	1	43			15.00	4.50	19.50	17.00	36.50	36.50		
5. Papiloma of Bladder	1	60.50	2	45		70.00	50.00	64.50	114.50	30.00	144.50	144.50		
6. T. B. Kidney	2	19	2	19			150.00	67.50	287.50	20.00	307.50	307.50		
7. Prostate	7	138	7	138	16.50	10.00	100.00	28.50	128.50	26.00	154.50	154.50		
8. Hydrocele	4	19	4	19	2.00		235.00	197.00	458.50	119.00	577.50	577.50		
G.—FEMALE GENITAL ORGANS														
1. Fibroids and Other Uterine Operations	22	382	22	382	14.50	7.00	790.00	538.00	1,349.50	312.50	1,661.00	1,661.00		
2. Pelvic Cellulitis	9	171	9	171	1.00		310.00	256.50	567.50	104.00	671.50	671.50		
3. Ovarian Cyst	15	198	15	198	26.50	15.00	525.00	303.00	869.50	192.00	1,061.50	1,061.50		
4. Salpingitis	12	172	12	172			475.00	268.50	743.50	160.00	903.50	903.50		
5. Ectopic Pregnancy	11	160	11	160	6.50		350.00	255.00	611.50	148.00	759.50	759.50		
6. Caesarian Section	2	29	2	29			75.00	43.50	118.50	23.00	141.50	141.50		
7. Mastitis	1	6	1	6			10.00	9.00	19.00	19.00	19.00	19.00		
8. Perineal Tear	1	27	1	27			25.00	40.50	65.50	17.00	82.50	82.50		
H.—BONES AND MUSCLES														
1. Osteo-myelitis	15	299	15	299	53.00	53.00	600.00	473.50	1,126.50	218.00	1,344.50	1,344.50		
2. Bone Tumor	5	107	5	107		9.00	225.00	160.50	394.50	80.00	474.50	474.50		
3. Ruptured Muscle	1	15	1	15			25.00	22.50	47.50	10.00	57.50	57.50		
4. Club Feet	1	23	1	23			25.00	34.50	59.50	30.00	89.50	89.50		
5. T. B. Hip	5	29	5	29		4.00	175.00	43.50	222.50	38.00	260.50	260.50		
6. T. B.	2	72	2	72			125.00	133.00	258.00	10.00	268.00	268.00		
7. T. B.	1	53	1	53		40.00	25.00	79.50	144.50	50.00	194.50	194.50		
I.—NEW GROWTHS														
1. Osteo-myelitis	23	265	23	265	14.50	117.00	740.00	402.50	1,274.00	332.00	1,606.00	1,606.00		
J.—HARE LIP AND CLEFT PALATE														
1. Hare Lip and Cleft Palate	4	61	4	61			175.00	91.50	266.50	31.00	297.50	297.50		
K.—MINOR INJURIES														
1. Minor Injuries	11	51.00	12	99	15.50	5.00	79.50	148.50	248.50	30.00	278.50	278.50		
Total														
	11	51.00	12	99	15.50	5.00	79.50	148.50	248.50	30.00	278.50	278.50	329.50	

GRAND SUMMARY

	Medical Cases	Surgical Cases	Obstet. Cases	Total
1. No of cases treated at home..	11,599	135	150	11,884
2. No of cases treated in hospital	845	1,274	680	2,799
3. Total number of cases	12,444	1,409	830	14,683
4. Total cost of home cases.....	\$39,977.50	\$ 1,917.75	\$ 2,756.50	\$ 44,651.75
5. Total Doctors' fees for Cases treated in Hospital	4,485.00	30,944.25	6,832.50	42,261.75
*6. Total Fees charged by Doctors for all cases	44,462.50	32,862.00	9,589.00	86,913.50
7. Number of days in hospital	15,463	9,222	6,922	31,607
8. Total hospital costs actually paid by City	24,253.30	13,643.50	13,792.25	51,689.05
Total hospital costs actually paid by Province	3,202.20	1,601.13	1,601.13	6,404.46
9. Total actual amount charged (Hospital costs and doctors' fees)	71,918.00	48,106.63	24,982.38	145,007.01
10. Total extra services in hospital (not paid for)	3,485.00	11,003.50	2,782.00	17,270.50
11. Total cost if extra services paid for	75,403.00	59,110.13	27,764.38	162,277.51

*Does not include \$4,786.00, cost of payment above quotas, special examinations, consultations, etc. If added, total fees paid would be \$91,699.50, and average cost per person \$2.72.

1. Average number of persons on relief during the above period	33,731
2. Average cost per person for doctors' fees	\$ 2.59
3. Average cost per person for Hospital Services paid by City	\$ 1.53
Average cost per person for Hospital Services paid by Province19
4. Average total cost per person (actually paid)	\$ 4.31
5. Average cost per person for extra Hospital Services (not paid)51
6. Average total cost per person, extra Hospital Services included	\$ 4.82
7. Average number of families on relief during the above period	8,368
8. Average cost per family for doctors' fees	\$10.42
9. Average cost per family for Hospital Services paid	\$ 6.95
10. Average total cost per family—Hospital and Doctors' fees (actually paid)	\$17.37
11. Average total cost per family if all extra Hospital Services are included	\$19.44
12. Average number of illnesses per family	1.8
13. Average total cost per illness	\$10.64
14. Death rate per 1,000 population in receipt of relief	2.4
15. Death rate per 1,000 population in City of Winnipeg	6.66

The College of Physicians and Surgeons of Manitoba

NOTICE IN REFERENCE TO THE CARRYING OF NARCOTICS

The information contained in the following letter received from the Department of Pensions and National Health may be of value to any physician travelling in the United States.

"Dear Sir:

"There have, from time to time, been instances of Canadian physicians encountering considerable difficulty in the United States by reason of their carrying narcotics with them on visits to that country. I do not, for a moment, intend to convey the impression that illicit traffic in narcotics was involved, but the fact remains that it is illegal for narcotics to be taken into the United States except under permit issued by the authorities of that country.

"In a recent instance, the physician concerned encountered real difficulty indeed in relation to narcotics which he had quite legally purchased from a Canadian drug store, but which he took with him on a trip to the southern United States. As a result, the United States Commissioner of Narcotics has written me as follows:

"I think this offers an excellent opportunity for both of us to request our respective medical associations to notify their doctors that if they intend to travel across the border they should not have drugs in their possession. If they are possessed of a medical condition which requires narcotics, they should place themselves in the care of a reputable physician when they reach their destination.

"In accordance with the Commissioner's request, therefore, I am communicating with the respective Registrars, and possibly you might consider it advisable to bring the matter to the attention of your members at some convenient time."

L.—FRACTURES	72	1,306.50	48	782	12.00	61.00	1,248.00	1,173.00	2,494.00	476.00	2,970.00	4,276.50
M.—MINOR OPERATIONS	37	344.75	51	232	27.00	6.00	706.50	348.00	1,087.50	247.50	1,335.00	1,679.75
N.—SPRAINS	1	3.50	3	16		5.00	30.00	24.00	59.00	5.00	64.00	67.50
O.—DISLOCATIONS	5	53.00	1	3		13.00	50.00	4.50	67.50		67.50	120.50
	135	1,917.75	1,274	9,063	516.80	469.50	29,939.00	13,634.00	44,554.30	11,003.50	55,557.80	57,475.55

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Anti-Anthrax Serum
Anti-Meningococcus Serum*
Anti-Pneumococcus Serum {Type I}
Anti-Pneumococcus Serum {Type II}
Diphtheria Antitoxin*
Diphtheria Toxin for Schick Test*
Diphtheria Toxoid*
Perfringens Antitoxin
Pertussis Vaccine
Rabies Vaccine

Scarlet Fever Antitoxin*
Scarlet Fever Toxin for Dick Test*
Scarlet Fever Toxin*
Smallpox Vaccine*
Staphylococcus Antitoxin
Staphylococcus Toxoid
Tetanus Antitoxin*
Tuberculin
Typhoid Vaccine*
Typhoid-Paratyphoid Vaccine*

Heparin

Insulin

Liver Extract for Oral Use

Liver Extract for Intramuscular Use

{1cc. containing extract from 10 gms. of liver}

*The following additional products have been made available recently
by the Connaught Laboratories*

Adrenal Cortical Extract

Epinephrine Hydrochloride Solution 1:1000

Epinephrine Hydrochloride Inhalant Solution 1:100

Liver Extract for Intramuscular Use

{1 cc. Containing Extract from 20 gms. of Liver}

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For use in the Province of Manitoba, products marked with an asterisk () in the above list are available to physicians and hospitals free of charge, upon application to the Provincial Department of Health and Public Welfare. In addition, by special arrangement between this Department and Municipalities, Insulin is available free of charge in the case of supplies of the product required by patients unable to pay therefor.

Department of Health and Public Welfare

NEWS ITEMS

MY METHOD IN PUERPERAL INFECTION

The following is an article written on "My Method in Puerperal Infection," which it is thought might be found of interest.

So much has been written on the prevention and treatment of childbed fever that, when the occasional case presents, there may be difficulty in separating the grain of effective means from the chaff of inefficient method.

I have had enthusiasms for new remedies, and felt the regret of their failures in practice. A process of approval and discard has left me a routine, neither new nor novel, but satisfying, which may assist practitioners in constructing a regular method or in amending one already used.

Prevention is highly important, but that part of it falling in the ante-natal period is not sufficiently emphasised and is far too little practised. The patient who reaches labour under-nourished, anaemic, toxæmic or weak from undetected illness is "sepsis liable." Pelvic measurement and occasional urinary examinations are the trivialities of ante-natal care, the real prevention is the wide one where the attendant acts as trainer for his patient and makes no mistake about her being in "perfect trim" for the expected event.

The only pre-medication advisable for the healthy are those most effective of medicines—an adequate diet, a sufficiency of fresh air and light, and some gentle, regular exercise.

Puerperal infection so frequently begins with the labour that the rules, complete surgical asepsis, no unnecessary vaginal examinations and no interference without definite indications, should by now be superfluous, but I must repeat them, for all of us do not live up to all of them all of the time.

Haemorrhage at any stage of labour is rightly considered a serious matter, but, unknowingly, many permit a degree of it during the third stage of labour. This is unnecessary and debilitating. A properly conducted third stage should never weaken a patient. It is sound guidance to say, "Leave the baby to the nurse. She will be watching it, anyhow."

Lastly, a word about perineal tears. An inspection should be made of any perineal or vaginal injuries, and proper and complete repair is essential. Use extra coarse silkworm gut and sink it deep; add catgut, if necessary. The torn surfaces, mucous, muscular and skin, must be properly approximated; no pockets should remain, and haemostasis must be complete. The secret of successful perineal repair is to use a thick suture that will not cut, and to apply it just tight enough to produce the approximation and haemostasis necessary for healing by first intention.

If these principles have been practised, the pyrexial patient will be exceptional.

I have made a practice of considering certain cases as puerperal infections from the completion of labour. This group includes such misfortunes as the failed forceps case, much handled and badly lacerated; the blanched placenta praevia, where hasty version had to take pride of place to surgical cleanliness; and others likely to miss septicaemia only by good luck.

In such instances I advocate the immediate administration of anti-streptococcic (scarlet or puerperal) serum in a 25 cc. dose; smaller dosage is unsatisfactory. Where acute anaemia is present, blood transfusion should not be delayed. I am not satisfied that blood transfusion is beneficial in established sepsis, but given thus early it is invaluable. It is undoubted that these two steps have, time and again, avoided or greatly modified infections in highly suspect cases.

From the treatment of the established case of puerperal sepsis I have dropped the use of intravenous antiseptics, and have limited the application of intra-uterine glycerine. In the first instance, while I appreciated the logic of applying an antiseptic to the streptococcus in the blood stream, the results suggested either that the antiseptic was not doing its job properly or that it was interfering with the production or action of the natural defences. In the second case I found glycerine invaluable in the cleansing of a dirty uterine cavity, and every case admitted was investigated for possible retained products, had any gently removed by means of a gloved finger, and had glycerine and iodine left in the uterus. Very occasionally, if the lochia was foul and free, this was repeated once. I never could appreciate the point in the continuous application of glycerine to the uterus when the cavity was empty and clean, and where the infection had passed to the blood stream itself.

Here I would like to point out that, in dropping intravenous antiseptics, and in reducing the use of intra-uterine glycerine, I have had very much in mind the preservation of my patient's natural resistance. The former, I fear, inhibits defence; the latter necessitates repeated disturbance and exhaustion of the patient.

The prime requirements for the successful treatment of puerperal sepsis is the maintenance of a patient capable of resistance and defence. Skilled nursing day and night is essential. The room should be well aired, have maximum sunlight, and be only comfortably warm. The patient should be nursed sitting up, kept thoroughly comfortable and suffer only unavoidable disturbance. I prefer dry rubbing down at 101° to sponging later, as it maintains a steadier comfort and is less exhausting. The bed bath I deprecate, the enema syringe and the vaginal douche I keep for infrequent use—all because they take heavy toll on the strength of those who are seriously ill.

Food should be light, but sufficient. No attempt should be made at set meals—the best policy is to offer frequent tasty morsels. I never discourage milk chocolate or toffee, and the only fruit forbidden is the banana. One of the vitamin concentrates may be given with advantage.

Sleep is all important. Aspirin and Dover's powder, five grains each, given last thing at night, usually prove satisfactory.

Where subinvolution is a feature, pituitrin 0.5 cc., six hourly for two days, and quinine sulphate, grains three, t.d.s. for three days gives, as a rule, rapid shrinkage.

Douching, as indicated above, I have almost discarded. Once the uterus is cleaned out, the douche can become a source of danger. Vaginal and perineal lacerations and abrasions respond better to swabbing with saline or peroxide of hydrogen. When their toilet is complete, an "Iodex" pessary may be left in the vagina without disturbing the patient, as a douche would do, and without any risk of infected matter being washed from vagina into uterus.

I frankly admit that my faith is complete in anti-streptococcic serum, the puerperal or, preferably, the scarlet type. I do not think the available sera are within reasonable distance of those we will ultimately have, but they offer the best results yet obtained. I have found them superior to vaccines, and they are available without the delay inseparable from autogenous vaccine therapy. I have seen any number of cases with monumental rigors, a racing pulse rate, and a haemolytic streptococcus in the blood culture recover and go home well.

In established cases, be they apparently severe or hopefully mild, give serum immediately, and begin with a 25 cc. to a 50 cc. dose intramuscularly. Depending on the severity of the infection, repeat in doses of not less than 20 cc. daily or every second day till the fever settles or serum reaction is produced.

Surgical measures are not generally applicable in the home, so are not within the scope of this article, but they should be readily available if pelvic abscess or pelvic or general peritonitis present.

The routine I have described has given results which have been highly encouraging. While my faith in the value of serum is high, I would end on the factor which, I think, is all important if the serum is to be successful. The patient cures herself, the serum is but the stimulant. Aim from the first ante-natal meeting, till labour is complete, at keeping the patient robust, resistant and responsive. If she has to use these defences after labour, be guarded against over-energy in treatment. It is not infrequently the weight that tips the balance adversely.

COMMUNICABLE DISEASES REPORTED

Urban and Rural - May, 1936.

Occurring in the Municipalities of:

Measles: Total 650—Winnipeg 375, Lac du Bonnet 55, Portage la Prairie R. 46, Strathclair 29, St. Boniface 24, Portage la Prairie City 23, Lawrence 22, Norfolk North 16, St. Paul West 13, St. Vital 6, Ste. Rose du Lac 3, Brooklands 2, De Salaberry 2, Harrison 2, Kildonan West 2, Morton 2, Selkirk 2, Springfield 2, Cornwallis 1, Flin Flon 1, Hanover 1, Hillsburg 1, Kildonan Old 1, Killarney 1, Lorne 1, Shoal Lake R. 1, Ste. Rose R. 1, Turtle Mountain 1, Unorganized 1, Whitemouth 1, Late Reported: April, Flin Flon 9, St. Boniface 3.

Scarlet Fever: Total 225—Winnipeg 174, Kildonan West 8, St. Vital 5, St. Clements 4, Morden 4, Gretna 4, Gilbert Plains R. 2, Gimli R. 2, Lorne 2, Minitonas 2, Rhineland 2, Swan River Rural 2, Ste. Anne 2, St. Boniface 2, Brokenhead 1, Carman 1, Grey 1, Kildonan East 1, Montcalm 1, Ritchot 1, Russell R. 1, Russell Town 1, Late Reported: April, St. Boniface 2.

Mumps: Total 136—Winnipeg 35, Binscarth 25, Russell R. 5, Shell River 5, Unorganized 4, Kildonan West 1, Louise 1, Roland 1, St. Boniface 1, St. James 1, Whitehead 1, Woodlands 1, Late Reported: April, Binscarth 50, Russell R. 5.

Chickenpox: Total 85—Winnipeg 44, St. Vital 15, St. Boniface 11, Brandon 2, Unorganized 1, Late Reported: April, St. Boniface 6, St. Vital 6.

German Measles: Total 80—Roland 26, Brandon 23, St. James 11, Louise 6, Rosser 6, Macdonald 2, Woodworth 2, Cornwallis 1, Kildonan West 1, St. Boniface 1, Rockwood 1.

Whooping Cough: Total 29—Winnipeg 25, Ste. Anne 2, Boulton 1, Portage la Prairie City 1.

Tuberculosis: Total 23—Winnipeg 9, De Salaberry 2, Louise 2, St. James 2, Unorganized 2, Brokenhead 1, Brooklands 1, Kildonan East 1, St. Boniface 1, St. Clements 1, Whitemouth 1.

Erysipelas: Total 12—Winnipeg 3, Louise 2, Edward 1, Grandview Town 1, Kildonan West 1, La Broquerie 1, Roland 1, St. Boniface 1, St. Vital 1.

Diphtheria: Total 9—Winnipeg 4, Charleswood 2, Ste. Anne 1, St. Clements 1, St. Francois Xavier 1.

Typhoid Fever: Total 4, Hanover 2, Selkirk 1, St. Francois Xavier 1.

Undulant Fever: Total 2—Charleswood 1, Late Reported: April, Transcona 1.

Trachoma: Total 2—Brandon 1, Brokenhead 1.

Puerperal Fever: Total 2—Hanover 1, Rockwood 1.

Septic Sore Throat: Total 1—Grandview Town 1.

Cerebrospinal Meningitis: Total 1: Montcalm 1.

Anterior Poliomyelitis: Total 1—Ochre River 1.

Venereal Disease: Total 120—Gonorrhoea 92, Syphilis 28.

DEATHS FROM ALL CAUSES IN MANITOBA

For the Month of May, 1936.

URBAN—Cancer 41, Pneumonia 14, Tuberculosis 13, Influenza 4, Measles 4, Syphilis 3, Typhoid 2, Lethargic Encephalitis 1, Epidemic Encephalitis 1, Erysipelas 1, all others under 1 year 1, all other causes 142, Stillbirths 16. Total 249.

RURAL—Pneumonia 28, Influenza 25, Cancer 17, Tuberculosis 12, Syphilis 2, Measles 1, Scarlet Fever 1, all others under 1 year 5, all other causes 142, Stillbirths 16. Total 249.

INDIAN—Tuberculosis 17, Pneumonia 3, Influenza 1, Syphilis 1, all other causes 8, Stillbirths 1. Total 31.

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